

Fig. 1
Prior Art

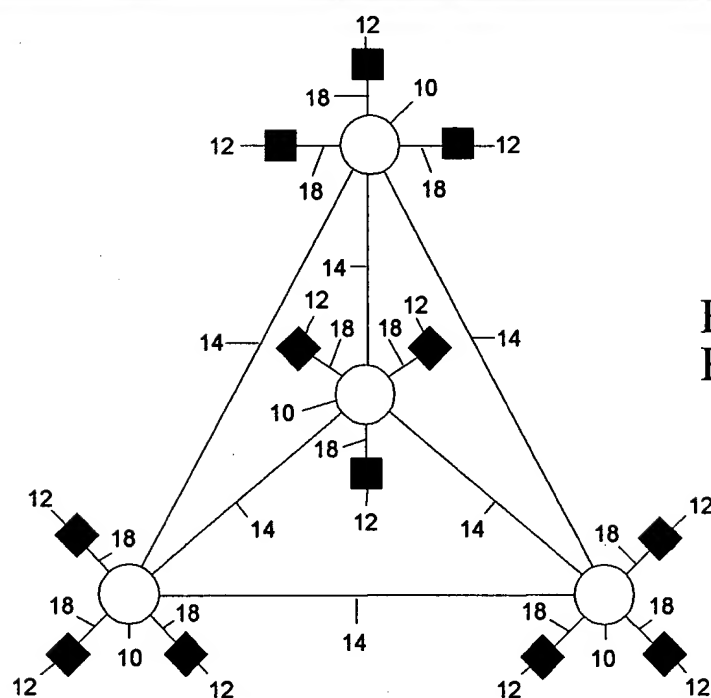


Fig. 2
Prior Art

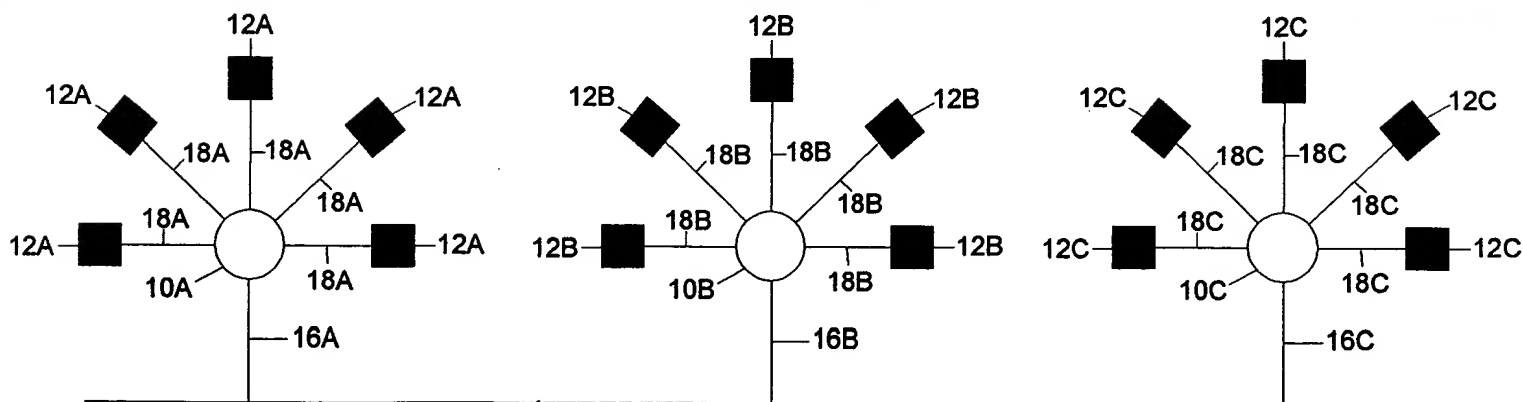


Fig. 3
Prior Art

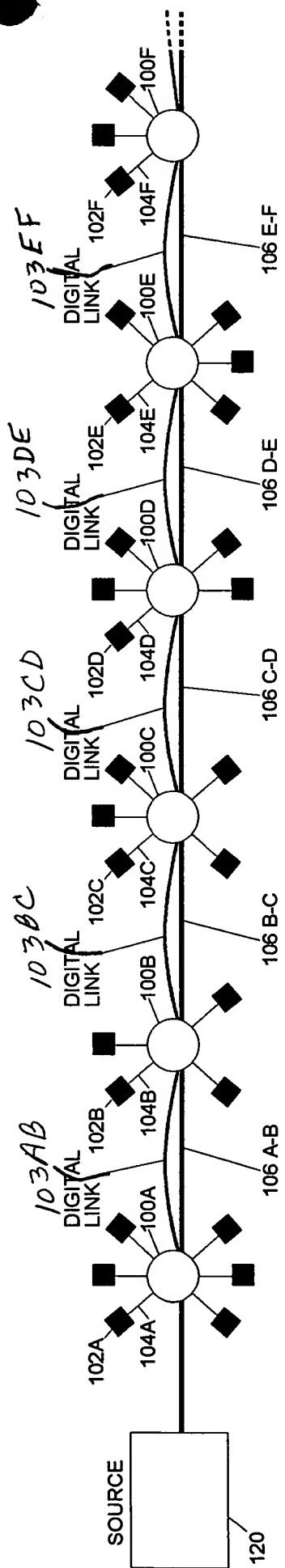
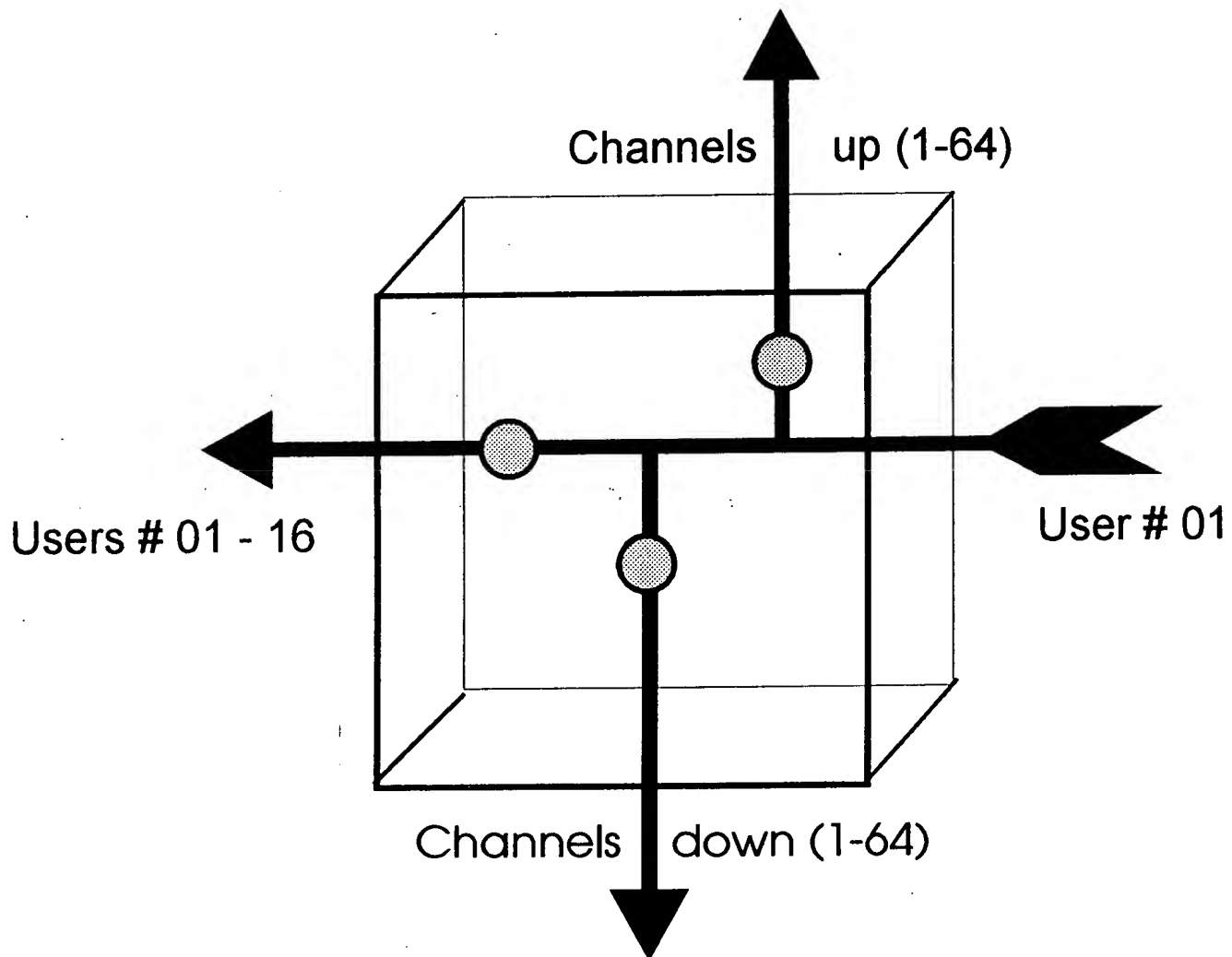


Fig. 4

Principle of Channel Segmentation (Transmit mode - Tx)

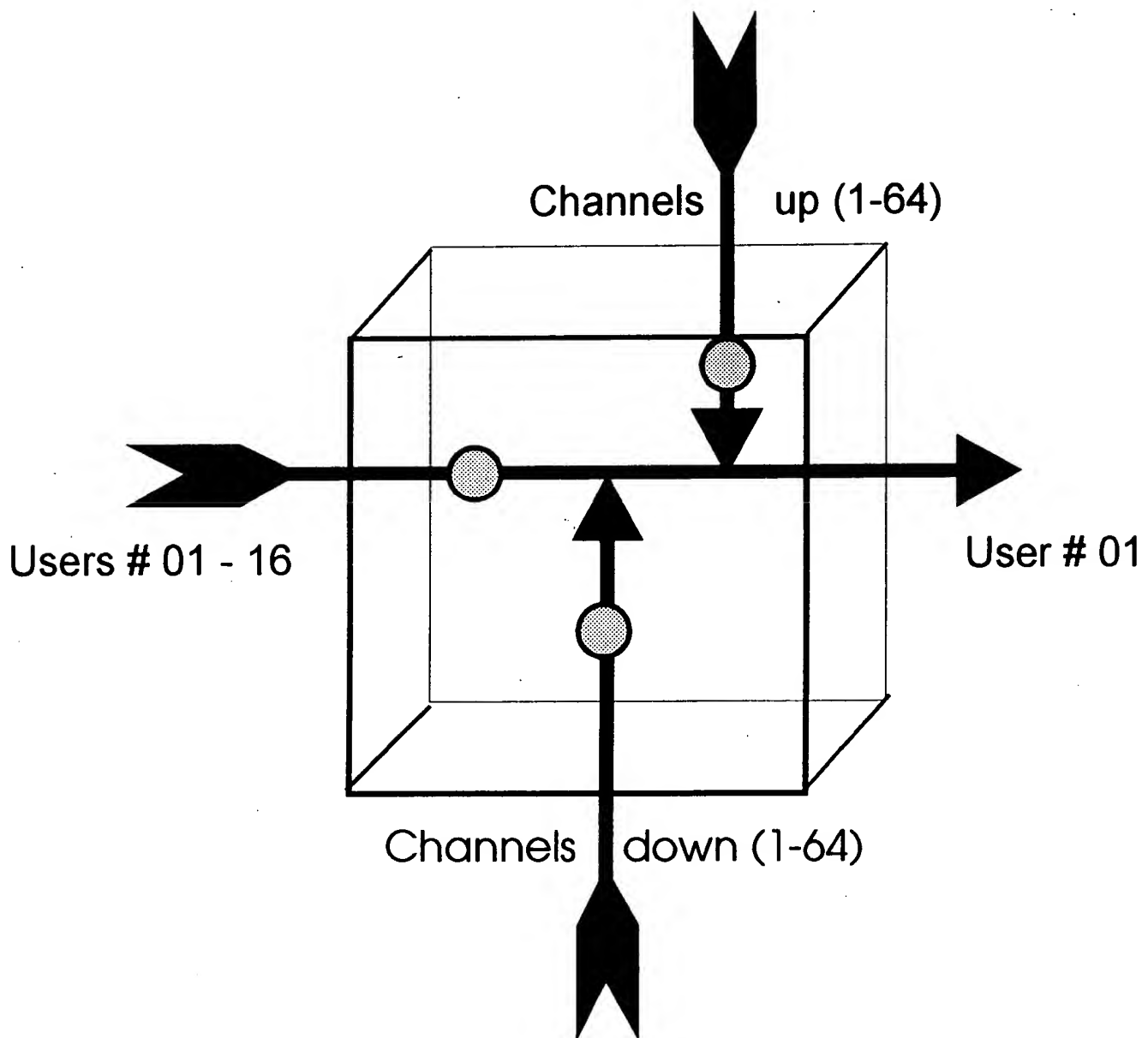


Digitally controlled analog switch (on/off)

Signal path may be interrupted to limit distribution over network at 3 points per crosspoint switch (up, down, across)

Fig. 5

Principle of Channel Segmentation 140230 (Receive mode - Rx)



Digitally controlled analog switch (on/off)

Signal path may be interrupted to limit distribution over network at 3 points per crosspoint switch (up, down, across)

Fig. 6



7.9.1

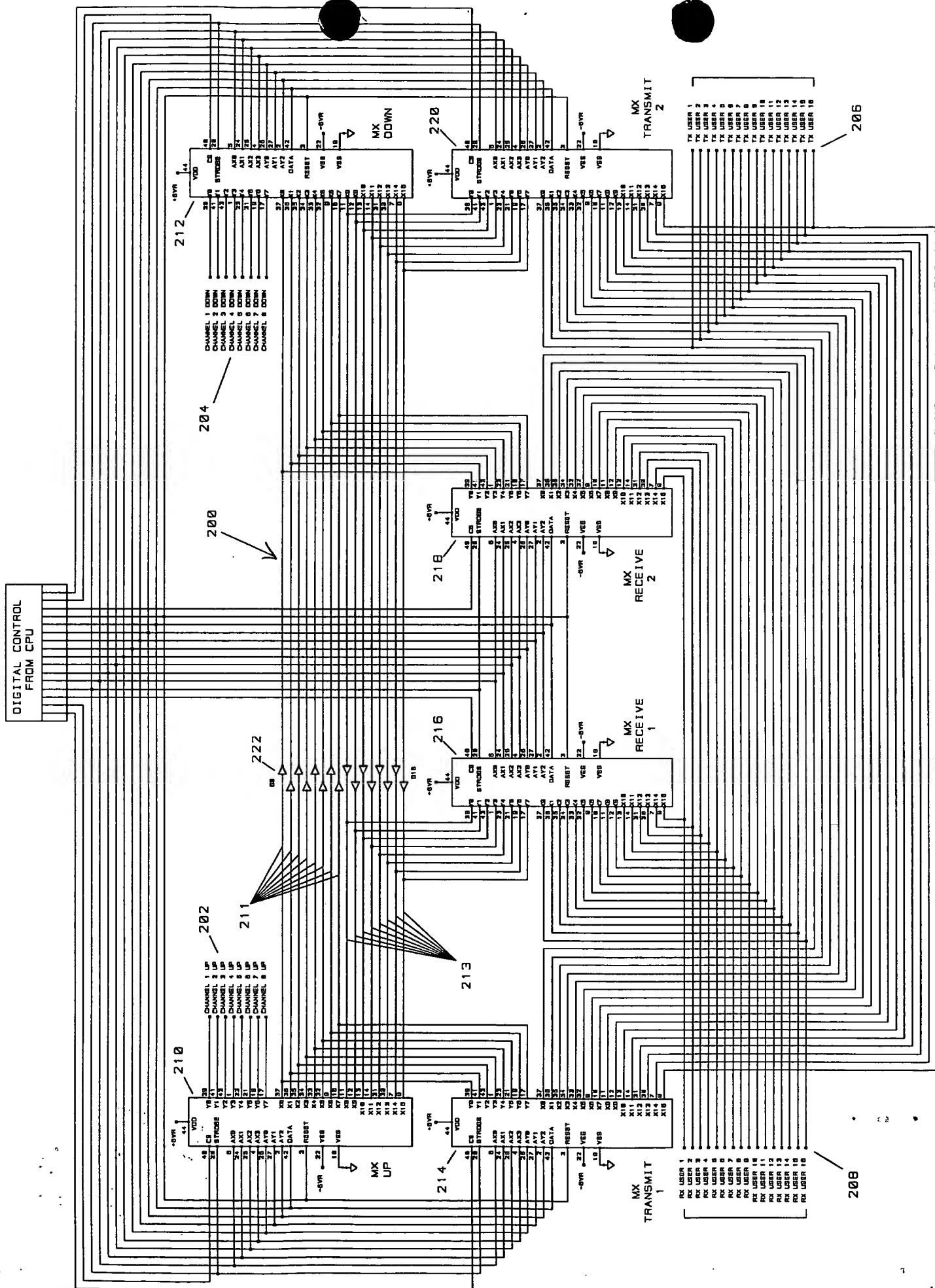


Fig. 7A

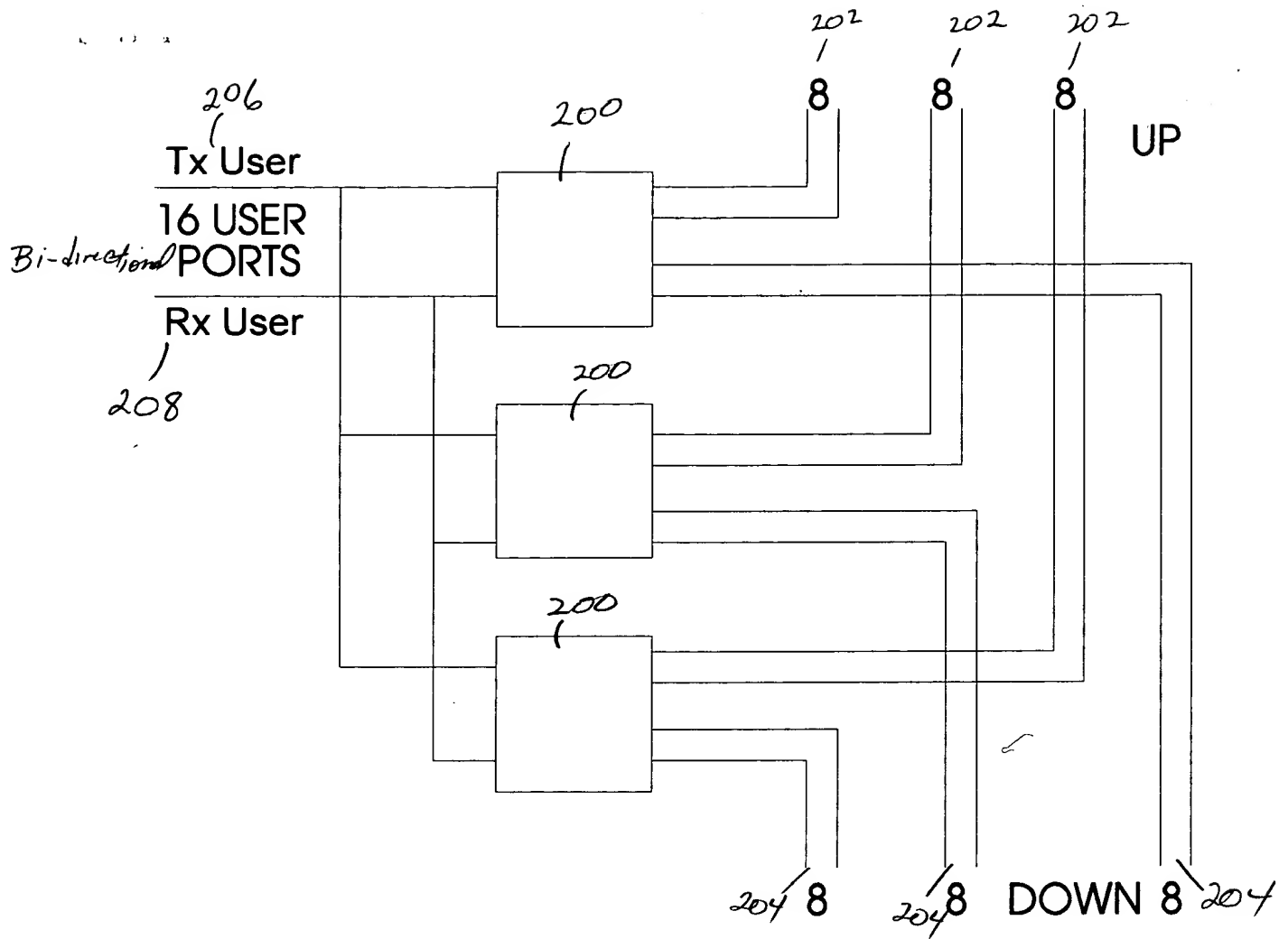


Fig. 8

The diagram shows a differential amplifier circuit. It consists of two operational amplifiers, A1 and A2. The non-inverting input of A1 is connected to a 'SYSTEM INPUT' (300) through a resistor. The inverting input of A1 is connected to the output of A2 through a resistor. The output of A1 is connected to the inverting input of A2 through a resistor. The non-inverting input of A2 is connected to ground through a resistor. The output of A2 is connected to the 'TWISTED PAIR LINE TRANSMISSION' (316) through a resistor (252). The other end of the twisted pair line is connected to the inverting input of A1 through a resistor (254). The output of A1 is also connected to ground through a resistor.

The diagram illustrates a 10th-order Butterworth low-pass filter implemented as a ladder network. It consists of eight identical stages connected in series. Each stage is composed of a series resistor and a shunt capacitor. The components are labeled as follows: C8, C9, C10, C11, C12, C13, C15, and C16. The input and output are connected to a common ground line at the bottom.

TWISTED PAIR LINE
RECEPTION

Twisted Pair Termination Module 08 140230

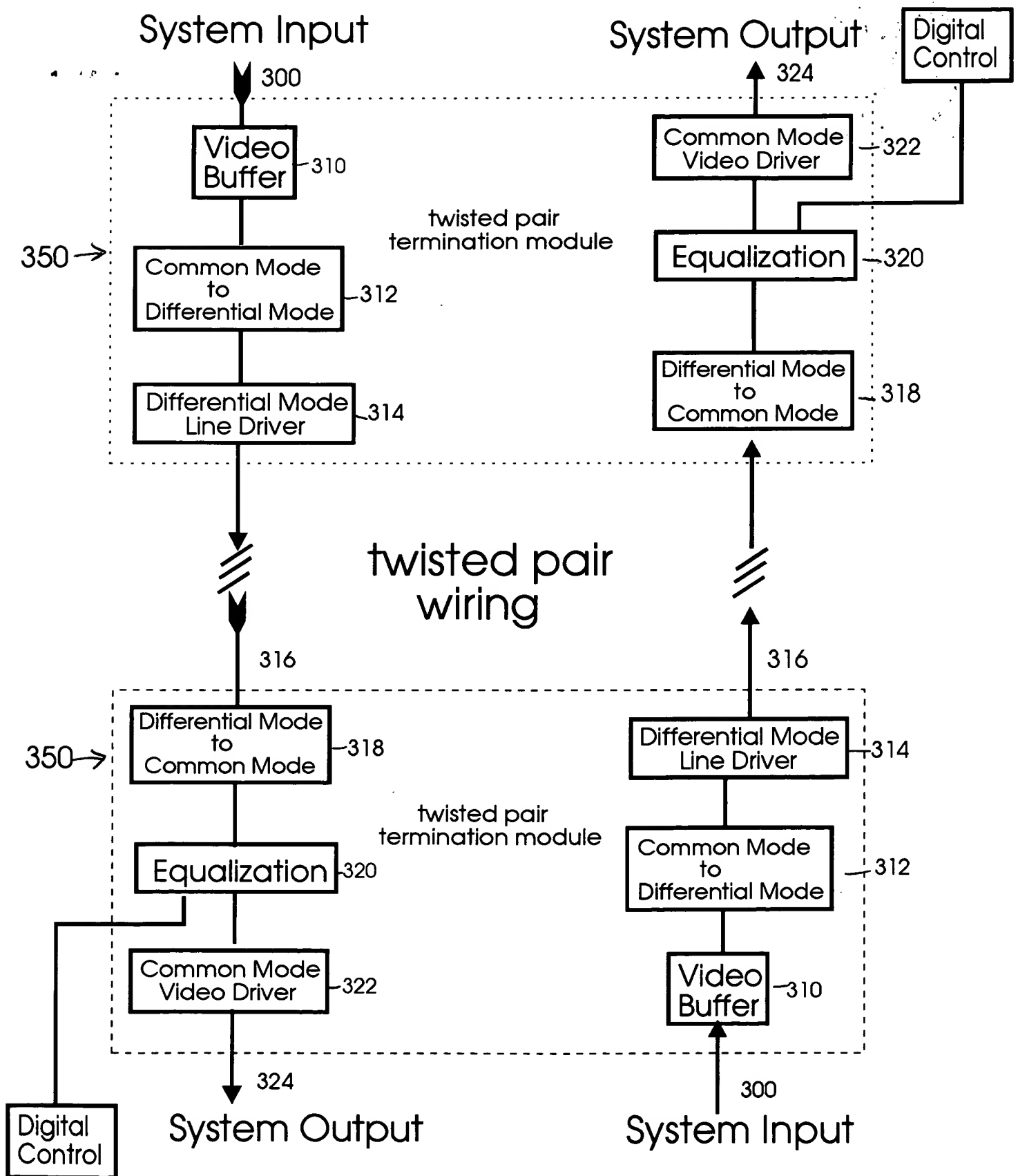


Figure 11



Fig. 12

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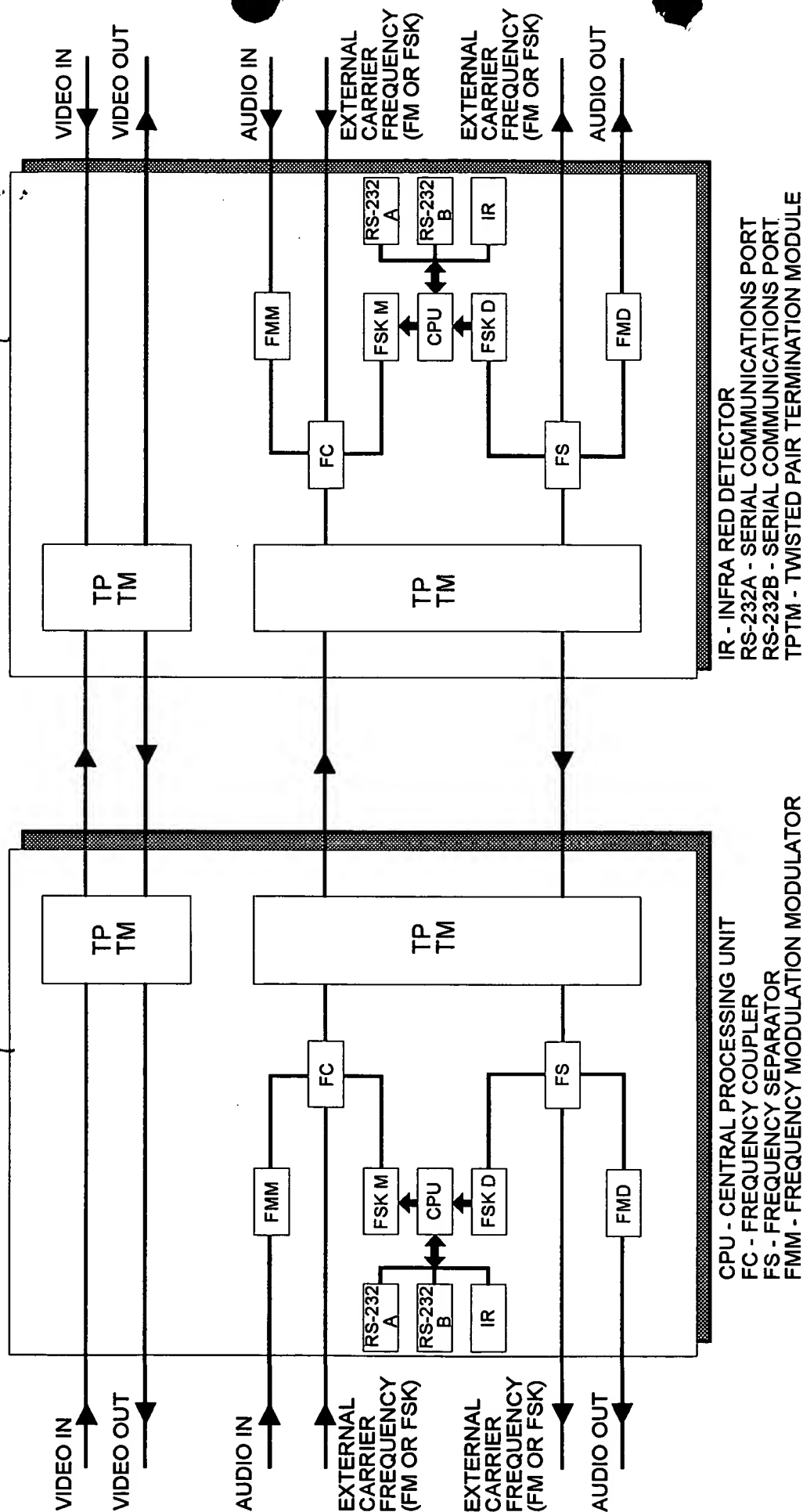


Fig. 13

IR - INFRA RED DETECTOR
 RRS-232A - SERIAL COMMUNICATIONS PORT
 RRS-232B - SERIAL COMMUNICATIONS PORT
 TPTM - TWISTED PAIR TERMINATION MODULE